

## VOLUME CONTENTS

### Volume 1, Number 1

- |  |     |  |
|--|-----|--|
|  | i   | Preface  |
|  | iii | Foreword   |
| Masamichi Yamashita,<br>Satoru Watanabe,<br>Tadaaki Mano, Nobuo Matsui,<br>Flemming Bonde-Petersen,<br>Niels Foldager,<br>Takatoshi Shoji and<br>Hideo Sudoh | 1   | Telescience testbed for physiological experiments<br>in space  |
| R. Monti and R. Fortezza   | 9   | Teletexus: the technical and operational aspects of<br>a microgravity experiment in telescience                                |
| M. Z. Saghir and S. Rosenblat  | 19  | Numerical simulation of tetracosane and cadmium<br>mercury telleride in 1- <i>g</i> and 10 <sup>-3</sup> <i>g</i> environments |
| Bernard Zappoli  | 31  | Response of a solid-gas growth interface to an<br>homogeneous time dependent acceleration field                                |
| R. Monti   | 39  | Telescience: an opportunity offered to fluid science<br>experimentation on different microgravity platforms                    |
| H. Lenski  | 47  | Advanced facilities for crystal growth   |
| Chen Xi Shen and<br>Pan Ming Xiang   | 53  | Review on the roles of the facilities with the<br>microgravity of short duration in material science<br>experiments            |
| O. Dupont, P. Queeckers,<br>S. Van Vaerenbergh and<br>J. C. Legros   | 57  | The AFPM-MBI experiment during Spacelab D-2<br>mission: results of the preparatory Texas 21 flight                             |
| W. Hallmann and W. Ley   | 65  | Residual acceleration influences on drop samples<br>by use of an inert gas flooded drop tower                                  |

### News and Views

- |     |   |
|-----|---|
| I   | Calendar of Microgravity-related Events |
| III | Announcement                            |

### Volume 1, Number 2

- |     |                       |
|-----|-----------------------|
| iii | Preface               |
| v   | Letters to the Editor |

**G. Chen** and **B. Roux**

**R. J. Hung** and **K. L. Shyu**

**G. Antonutto, C. Capelli**  
and **P. E. di Prampero**

**Walter E. Knabe**

**Alberto Passerone**

**Pg. Falciani, G. Margheri**  
and **M. Tacconi**

**News and Views**

vii In Memoriam

73 An analytical study of thermocapillary flow and surface deformations in floating zones

81 Cryogenic liquid hydrogen reorientation activated by high frequency impulsive reverse gravity acceleration of geyser initiation

93 Pedalling in space as a countermeasure to microgravity deconditioning

103 Microgravity quality analysis guidelines for automated orbital systems

111 Measuring surface tension in space

119 A space module for dichroism spectroscopy using polarization modulated light

I Calendar of Microgravity-related Events

II Announcement

### Volume 1, Number 3

iii Preface

v Letters to the Editor

**R. J. Hung, K. L. Shyu and**  
**C. C. Lee**

125 Slosh wave excitation associated with high frequency impulsive reverse gravity acceleration of geyser initiation

**Z. Abdullah and M. Salcudean**

135 Mathematical simulation of gas bubble transport in moving liquids in low gravity environments

**A. Bewersdorff, G. P. Görler,**  
**G. Otto, K. Wittmann,**  
**L. L. Regel, V. Shalimov,**  
**C. Barta and A. Triska**

143 Undercooling of alloys in an amorphous matrix

**F. Falk**

149 Nucleation in monotectic alloys

**D. Langbein**

155 Drop and bubble migration at large Reynolds and Marangoni numbers

**R. Monti and R. Fortezza**

163 The scientific results of the experiment on oscillatory Marangoni flow performed in telescience on Texus 23

**J. Neubert, H. Rahmann,  
W. Briegleb, K. Slenzka,  
A. Schatz and B. Bromeis**

- 173 STATEX II on Spacelab Mission D-2—an overview  
of the joint project "Graviperception and Neuronal  
Plasticity" and preliminary pre-flight results**

**I Calendar of Microgravity-related Events**

**Volume 1, Number 4**

**iii Publisher's Announcement**

**v In Memoriam**

**L. G. Napolitano✕, A. Viviani  
and R. Savino**

- 183 Similar solutions of double-diffusive dissipative  
layers along free surfaces**

**A. Ye. Rednikov and  
Yu. S. Ryazantsev**

- 199 On thermocapillary instability of a cooling or  
heating droplet**

**E. Schmidt, P. Foth,  
C. Massau and A. Kellner**

- 205 Automation and robotics implementation for  
Columbus Free Flying Laboratory**

**J. Meseguer, J. M. Perales  
and N. A. Bezdeneznykh**

- 215 A theoretical approach to impulsive motion of  
viscous liquid bridges**

**J. R. Pietrzyk, S. C. Honkonen  
and J. R. Schuster**

- 221 Fluid motion persistence in microgravity receiver  
tank chilldown**

**Jaak Holemans,  
John M. Cassanto,  
Ted W. Moller,  
Valerie A. Cassanto,  
Alan Rose, Marvin Luttges,  
Dennis Morrison, Paul Todd,  
Robin Stewart,  
Richard Z. Korszun  
and Gary Deardorff**

- 235 The BIMDA Shuttle flight mission: a low cost  
microgravity payload**

**I Calendar of Microgravity-related Events**

